

Amendment to the Specification:

On page 12, lines 28-35, please delete the current paragraph and replace it with:

Although ratios of N^*/Z^* less than or equal to 1 are preferred for the process of the present invention, some ranges of the ratio are more preferred. For catalysts at the beginning of life with average carbon dioxide concentrations of less than or 1 percent, N^*/Z^* ranging from 0.1 to 0.6 is preferred, particularly for high absolute efficiency and low efficiency aging of the catalyst. For older catalysts which have produced more than 1.1 kilo metric tons of ethylene oxide per m³ of catalyst (70,000 pounds of ethylene oxide per cubic foot of catalyst), a N^*/Z^* ratio of 0.4 to 1.0 is preferred for high efficiency and lower efficiency aging. Activity may be increased by increasing the N^*/Z^* ratio beyond the efficiency optimum.

On page 20, lines 29-35, please delete the current paragraph and replace it with:

The pressure is maintained at 1.79 kPa(kilopascals) (275 psig (pounds per square inch, gauge)) and the total inlet flow is maintained from 225 to 625 SCLH (standard cubic liter per hour) (8 to 22 SCFH (standard cubic feet per hour)). SCLH [[SCFH]] refers to cubic [[feet]] liter per hour at standard temperature and pressure, namely, 0°C. and one atmosphere. Temperature (°C.), percent outlet ethylene oxide, and catalyst efficiency are obtained as the responses describing the catalyst performance. Gas feeds contain ethylene, oxygen, carbon dioxide (optional), ethane (optional), ethyl chloride, nitric oxide and nitrogen as the ballast gas in all examples.

On page 21, lines 1-11, please delete the current paragraph and replace it with:

The catalyst test procedure used for autoclaves involves the following: 40 or 80 cc of catalyst is charged to the back-mixed autoclave and the weight of the catalyst is noted. The back-mixed autoclave is heated to reaction temperature in a nitrogen flow of [[10 or 20 SCFH]] 280 to 570 SCLH with the impeller operating at 1500 rpm. The nitrogen flow is then discontinued and the above-described feed stream is introduced into the reactor. The total gas inlet flow is then adjusted to the desired amount. Conditions are then adjusted to those desired for the test. The outlet epoxide concentration is monitored to make certain that the catalyst has reached its peak steady state performance. The efficiency of the catalyst to ethylene epoxide and the rate of deactivation (temperature rise and efficiency decline) may then be obtained. In determining activity and efficiency, the process and catalyst should be under steady state conditions.

On page 22, lines 5-12, please delete the current paragraph and replace it with:

The silver-impregnated carrier was then roasted as follows to effect reduction of silver on the catalyst surface. The impregnated carrier was spread out in a single

layer on stainless steel wire mesh trays then placed on a stainless steel belt (spiral weave) and transported through a 2" x 2" square heating zone for 2.5 minutes, or equivalent conditions were used for a larger belt operation. The heating zone was maintained at 500°C by passing hot air upward through the belt and the catalyst particles at the rate of 7533 standard cubic liter per hour (SCLH) (266 standard cubic feet per hour (SCFH)). After being roasted in the heating zone, the catalyst was cooled in the open air to room temperature and weighed.

On page 23, lines 4-11, please delete the current paragraph and replace it with:

Two 40 cc. samples of Catalyst 1, weighing 31.3 g each, were run in two different reactors. In both tests, the start-up inlet conditions were 8.0 mole percent O₂, 30.0 mole percent C₂H₄, 5.0 ppmv ethyl chloride, and 5 ppmv NO at a temperature of 220°C and total reactor flow of 269 SCLS (9.5 SCFH). No carbon dioxide or ethane were fed to the reactor inlet. Temperature was then increased to 240°C, and on Day 5, C₂H₆ was increased to 0.27 mole percent. Further changes are shown in Tables II and III; ethylene oxide is abbreviated EO in all tables. In Test A, where a ratio of N*/Z* less than 1 is maintained, the efficiency is higher and more stable.

On page 25, please replace Table IV with the following:

Table IV: Tests C and A of Catalyst 1

Test	Day	Reactor Flow SCLH(SCF H)	Inlet O ₂ (mol %)	Inlet C ₂ H ₄ (mol %)	Inlet C ₂ H ₆ (mol %)	Outlet CO ₂ (mol %)	Inlet ECI (ppm)	Z*	Inlet NO (ppm)	N*	N*/Z*	Outlet EO (mol %)	Temp. (°C)	Eff. (%)
C	7	476 (16.8)	8.5	25.0	0.00	0.42	4.3	16.6	5.7	5.0	0.30	1.64	230	88.6
C	8	476 (16.8)	8.5	25.0	0.20	0.42	7.6	16.8	6.0	5.2	0.31	1.63	230	88.6
A	4	269 (9.5)	8.0	30.0	0.00	0.59	5.0	16.7	6.8	5.9	0.35	2.11	240	87.9
A	5	269 (9.5)	8.0	30.0	0.27	0.59	9.5	16.7	7.0	6.1	0.36	2.10	240	87.9

On page 27, please replace Table V with the following:

Table V: Test D - Optimization of N*/Z* Gaseous Promoter Ratio

Day	Inlet O ₂ (mol%)	Inlet CO ₂ (mol%)	Inlet C ₂ H ₄ (mol%)	Inlet C ₂ H ₆ (mol%)	Outlet CO ₂ (mol%)	Inlet ECI (ppm)	Z*	Inlet NO (ppm)	N*	N*/Z*	Outlet EO (mol%)	Eff. (%)	Temp. (°C)	Reactor Flow SCLH
8	8.2	0.3	24.6	0.2	0.72	6.5	14.5	6.0	5.2	0.36	1.48	88.9	230	481 (17.0)
9	8.2	0.3	24.6	0.2	0.75	4.5	10.0	6.0	5.2	0.52	1.49	88.2	230	481 (17.0)
10	8.2	0.3	24.6	0.2	0.71	7.4	16.6	6.1	5.3	0.32	1.44	88.7	230	481 (17.0)
11	8.2	0.3	24.6	0.2	0.72	6.0	13.4	6.1	5.3	0.40	1.46	88.8	230	481 (17.0)
12	8.2	0.3	24.6	0.2	0.72	6.5	14.5	6.2	5.3	0.37	1.45	88.9	230	481 (17.0)
17	8.2	0.3	24.6	0.2	0.71	6.5	14.5	6.1	5.3	0.37	1.41	88.8	230	481 (17.0)
23	8.2	0.3	24.6	0.2	0.70	6.5	14.5	6.1	5.3	0.37	1.38	88.7	230	481 (17.0)

On page 28, lines 2-8, please delete the current paragraph and replace it with:

Two 40 cc. samples of Catalyst 2 with a weight of 31.3 g. each were run at the same time in different reactors. In both tests, the start-up inlet conditions were 8.0 mole percent O₂, 30.0 mole percent C₂H₄, 5.0 ppmv ethyl chloride and 5 ppmv NO at a temperature of 220°C and total reactor flow of 269 SCLH (9.5 SCFH). No carbon dioxide or ethane were fed to the reactor inlet initially. Temperature was increased to 245° over the first three days. Further changes are shown in Tables VI and VII. Clearly, the selectivity and activity of Catalyst 2 is higher in Test A where the N*/Z* ratio is below 1, than in Test B where the ratio is greater than 1.